

ABSTRACT

Plasma discharge occurs in the gas circulation space between the upper surface of a shower plate and the lower surface of a cover plate in partial contact with the shower plate, and the supplied microwave is uselessly consumed by this undesired discharge, thereby losing the power. A plasma processing apparatus comprises a shower plate having ejection holes for ejecting gas, a microwave antenna, and a cover plate interposed between the shower plate and the microwave antenna. The material of the cover plate has a relative dielectric constant smaller than that of the material of the shower plate.